PTO/SB/08A (08-00)

Substitute for form 1449A/PTO **INFORMATION DISCLOSURE STATEMENT BY APPLICANT** *(use as many sheets as necessary)*			***Complete if Known***	
			Application Number	~~Not Known~~ 10/70529 7053297
			Filing Date	11/10/2003
			First Named Inventor	Silver et al.
			Group Art Unit	2621
			Examiner Name	D. Mariam
Sheet	1	of	3	Attorney Docket Number	C97-050 CON4

U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number	Kind Code[2] (if known)			
✓		3,069,654		Hough et al.	12-18-1962	
		3,986,007		Ruoff, Jr.	10-12-1976	
		4,146,924		Birk et al.	03-27-1979	
		4,581,762		Lapidus et al.	04-08-1986	
		4,618,989		Tsukune et al.	10-21-1986	
		4,707,647		Coldren et al.	11-17-1987	
		4,972,359		Silver et al.	11-20-1990	
		5,245,674		Cass et al.	09-14-1993	
		5,343,390		Doi et al.	08-30-1994	
		5,351,310		Califano et al.	09-27-1994	
		5,515,453		Hennessey et al.	05-07-1996	
		5,694,482		Maali et al.	12-02-1997	
✓		5,703,960		Soest	12-30-1997	
✓		5,828,769		Burns	10-27-1998	

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Foreign Patent Document			Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T[6]
		Office[3]	Number[4]	Kind Code[5] (if known)				

Examiner Signature	[signature]	Date Considered	5/31/05

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[1]Unique citation designation number. [2]See attached Kinds of U.S. Patent Documents. [3]Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). [4]For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [5]Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. [6]Applicant is to place a check mark here if English language Translation is attached.

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Complete if Known			
Application Number	Not Known 10/705297		
Filing Date	11/10/2003		
First Named Inventor	Silver, et al.		
Group Art Unit	2621		
Examiner Name	D. Mariam		
Attorney Docket Number	C97-050 CON4		

Sheet	2	of	3

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No.[1]	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T^2
de		COGNEX CORPORATION, "Description Sobel Search," Natick, MA USA, 1998 but public before the above-referenced filing date.	
de		COGNEX CORPORATION, "Chapter 7 CONLPAS," Cognex 3000/4000/5000 Programmable Vision Engines, Vision Tools, 1996, pp. 307-340, Revision 7.4 590-0136, Natick, MA USA	
de		HU, YU HEN, "CORDIC-Based VLSI Architectures for Digital Signal Processing," IEE Signal Processing Magazine, July 1992, pp. 16-35, 1053-5888/92, USA	
de		HU, et al, "Expanding the Range of Convergence of the CORDIC Algorithm," IEEE Transactions on computers, January 1991, pp. 13-21, Vol. 40, No. 1, USA	
de		Ballard, D.H., "Generalizing the Hough Transform to Detect Arbitrary Shapes," Pattern Recognition, 1981, pp. 111-122, Vol. 13, No. 2, Pergaman Press Ltd., UK	
de		LIN, et al., "On-Line CORDIC Algorithms," IEEE Transactions on Computers, pp. 1038-1052, Vol. 39, No. 8, USA	
de		WALLACK, AARON SAMUEL, "Chapter 4 Robust Algorithms for Object Localization," Algorithms and Techniques for Manugacturing, 1995, pp. 97-148 (and Bibliography pp. 324-335) PhD thesis, Unversity of California at Berkeley, USA	
de		JAMES D. FOLEY, ANDRIES VAN DAM, STEVEN K. FEINER, JOHN F. HUGHES, Second Edition in C, Introduction to Computer Graphics, pp. 36-49, Addison-Wesley Publishing Company, 1994, USA	
de		LISA GOTTESFELD BROWN, A Survey of Image Registration Techniques, Department of Computer Science, Columbia University, New York, NY 10027, ACM Computing Surveys, Vol. 24, No. 4, December 1992	
de		GUNILLA BORGEFORS, Hierarchical Chamfer Matching: A Parametric Edge Matching Algorithm, IEEE Transactions on Pattern Analysis and Machine Intelligence, Vol. 10, No. 6, November 1988	

Examiner Signature		Date Considered	5/31/05

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT *(use as many sheets as necessary)*	Application Number	Not Known
	Filing Date	11/10/2003
	First Named Inventor	Silver et al.
	Group Art Unit	2621
	Examiner Name	D. Mariam
Sheet **3** of **3**	Attorney Docket Number	C97-050_CON4

OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T[2]
(initialed)		DANIEL P. HUTTENLOCHER AND WILLIAM J. RUCKLIDGE, A Multi-Resolution Technique for Comparing Images Using the Hausdorff Distance, Department of Computer Science, Cornell University, Ithaca, NY 14853,	
(initialed)		I.J. COX AND J.B. KRUSKAL (AT&T Bell Laboratories, Murray Hill, NJ), On the Congruence of Noisy Images to Line Segment Models, IEEE, 1988	
(initialed)		DANIEL P. HUTTENLOCHER, GREGORY A. KLANDERMAN AND WILLIAM J. RUCKLIDGE, Comparing Images Unsing the Hausdorff Distance, IEEE Transaction on Pattern Analysis and Machine Intelligence, Vo. 15, No. 9, September 1993	
(initialed)		AKINORI KAWAMURA, KOJI YURA, TATSUYA HAYAMA, YUTAKA HIDAI, TADATASHI MINAMIKAWA, AKIO TANAKA AND SHOICHI MASUDA, On-line Recognition of Freely Handwritten Japanese Characters Using Directional Features Densities, IEEE 1992	

Examiner Signature	*(signature)*	Date Considered	5/31/05

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